CORE JAVA

1. **A First Look**
   - A Simple Java Class
   - Java's "Hello World" Program

2. **Java Basics**
   - Language and Platform Features
   - Program Life Cycle
   - The Java SE Development Kit (JDK)

3. **Class and Object Basics**
   - The Object Model and Object-Oriented Programming
   - Classes, References, and Instantiation
   - Adding Data to a Class Definition
   - Adding Methods (Behavior)

4. **More on Classes and Objects**
   - Accessing data, the "this" variable
   - Encapsulation and Access Control, public and private Access
   - Constructors and Initialization
   - static Members of a Class
   - Scopes, Blocks, References to Objects

5. **Flow of Control [briefly due to attendee experience]**
   - Branching: if, if-else, switch
   - Iteration: while, do-while, for, break, continue

6. **Strings and Arrays**
   - String
   - String Buffer
   - String Builder
   - Arrays, Primitive Arrays, Arrays of Reference Types
   - Varargs

7. **Packages**

- Package Overview – Using Packages to Organize Code
- import statements
- vCreating Packages, package Statement, Required Directory Structure
- Finding Classes, Packages and Classpath

8. Composition and Inheritance
- Using Composition to Deal With Complexity
- Composition/HAS-A, Delegation
- Using Inheritance and Polymorphism to share commonality
- IS-A, extends, Inheriting Features, Overriding Methods, Using Polymorphism
- Class Object
- Abstract Classes

9. Interfaces
- Using Interfaces to Define Types
- Interfaces and Abstract Classes

10. Exception Handling
- Exceptions and the Exception Hierarchy
- try and catch
- Handling, program flow with Exceptions

11. JDBC
- JDBC basics
- JDBC Architecture
- Using JDBC drivers & DriverManager
- Class Connection and connecting to a database
- Class Statement and executing SQL statements
- Other statement types
- Driver types

12. Java Collections and Generics
- The Collections Framework and its API
- Collections and Java Generics
- Collection, Set, List, Map, Iterator
- Autoboxing
- Collections of Object (non-generic)
- Using ArrayList, HashSet, and HashMap for-each Loop
- Processing Items With an Iterator
- More About Generics

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13.The Java Streams Model
- Delegation-Based Stream Model
- InputStream
- OutputStream
- Media-Based Streams
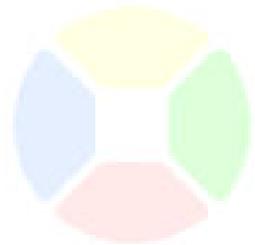- Filtering Streams
- Readers and Writers

14.Working with Files
- File Class
- Modeling Files and Directories
- File Streams
- Random-Access Files

15.Advanced Stream Techniques
- Buffering
- Data Streams
- Push-Back Parsing
- Byte-Array Streams and String Readers and Writers

16.Java Serialization
- The Challenge of Object Serialization
- Serialization API, Serializable Interface
- ObjectInputStream and ObjectOutputStream
- The Serialization Engine
- Transient Fields
- readObject and writeObject
- Externalizable Interface